CLAIMS

~~1. An electronic access control device comprising:~~
~~a circuit having a portion deactivated during a first time period;~~
~~the portion of the circuit enabled during a second time period;~~
~~the portion of the circuit having an enable output signal generated in response to as sensed electromagnetic signal;~~
~~the portion of the circuit being enabled for an extended time period that is greater than the second time period;~~
~~the portion of the circuit having an input code output generated in response to the electromagnetic signal and during the extended time period;~~
~~a microprocessor having an unlock output signal generated if the input code matches the access code; and~~
~~an electromechanical driver having an output signal generated in response to the unlock signal.~~

~~2. The device of claim 1, the portion of the circuit comprising a wake up circuit.~~

~~3. The device of claim 1, the portion of the circuit comprising a receiver.~~

~~4. The device of claim 1, the portion of the circuit comprising a wake up circuit and a receiver.~~

~~5. The device of claim 1, the portion of the circuit comprising an antenna.~~

~~6. The device of claim 1, further comprising at least one of the following is responsive to the output signal of the electrochemical driver: a solenoid; an electromechanical relay; a DC motor; and, a solid state relay.~~

~~7. The device of claim 1, wherein the electromagnetic signal is infrared.~~

~~8. The device of claim 1, wherein the electromagnetic signal is within a radio frequency.~~

~~9. An apparatus comprising:~~
~~a first circuit comprising an oscillator and having a first circuit output signal;~~
~~a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;~~
~~a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;~~
~~a fourth circuit temporarily enabled to compare the input code to an access code; and,~~
~~an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code.~~

CLAIMS

~~1. An electronic access control device comprising:~~
~~a circuit having a portion deactivated during a first time period;~~
~~the portion of the circuit enabled during a second time period;~~
~~the portion of the circuit having an enable output signal generated in response to as sensed electromagnetic signal;~~
~~the portion of the circuit being enabled for an extended time period that is greater than the second time period;~~
~~the portion of the circuit having an input code output generated in response to the electromagnetic signal and during the extended time period;~~
~~a microprocessor having an unlock output signal generated if the input code matches the access code; and~~
~~an electromechanical driver having an output signal generated in response to the unlock signal.~~

~~2. The device of claim 1, the portion of the circuit comprising a wake up circuit.~~

~~3. The device of claim 1, the portion of the circuit comprising a receiver.~~

~~4. The device of claim 1, the portion of the circuit comprising a wake up circuit and a receiver.~~

~~5. The device of claim 1, the portion of the circuit comprising an antenna.~~

~~6. The device of claim 1, further comprising at least one of the following is responsive to the output signal of the electrochemical driver: a solenoid; an electromechanical relay; a DC motor; and, a solid state relay.~~

~~7. The device of claim 1, wherein the electromagnetic signal is infrared.~~

~~8. The device of claim 1, wherein the electromagnetic signal is within a radio frequency.~~

~~9. An apparatus comprising:~~
~~a first circuit comprising an oscillator and having a first circuit output signal;~~
~~a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;~~
~~a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;~~
~~a fourth circuit temporarily enabled to compare the input code to an access code; and,~~
~~an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code.~~

~~10. The apparatus of claim 9, the first and second circuits comprising a wake up circuit.~~

~~11. The apparatus of claim 9, the third circuit comprising a decode circuit.~~

~~12. The apparatus of claim 9, the unlock device comprising at least one of the following: a solenoid; an electromechanical relay; a DC motor; and, a solid-state relay.~~

~~13. The apparatus of claim 9, wherein the electromagnetic signal is infrared.~~

~~14. The apparatus of claim 9, wherein the electromagnetic signal is within a radio frequency.~~

~~15. An apparatus comprising:~~
~~an oscillator having an output comprising a plurality of duty cycles;~~
~~a circuit that is periodically enabled for a time t_1 and disabled for a time t_2 during at least some of the duty cycles;~~
~~a portion of the circuit that generates an input code in response to an electromagnetic signal;~~
~~a microprocessor that compares the input code to an access code;~~
~~a switch that enables the portion of the circuit as the input code is being received for a time t_3 that is greater than the time t_1.~~

~~16. The apparatus of claim 15, wherein the portion of the circuit is a decoder.~~

~~17. The apparatus of claim 15, wherein the switch is responsive to an override signal generated by the decoder.~~

~~18. The apparatus of claim 15 further comprising an unlock device responsive to an unlock signal generated by the microprocessor.~~

~~19. The apparatus of claim 18, the unlock device comprising at least one of the following: a solenoid; an electromechanical relay; a DC motor; and, a solid state relay.~~

~~20. The apparatus of claim 15 further comprising an electromechanical driver electrically connected to the microprocessor and an unlock device.~~

~~21. The apparatus of claim 15, wherein the electromagnetic signal is infrared.~~

~~22. The apparatus of claim 15, wherein the electromagnetic signal is within a radio frequency.~~

~~23. A circuit operating on current drained from a batter comprising:~~
~~an electronic circuit having an output that indicates detection of a device capable of providing an electromagnetic signal;~~

~~a decoder that extracts an input code transmitted via the electromagnetic signal;~~
~~a switch that, in response to an input, increases the current drained from the battery;~~
~~an electronic circuit that compares the input code to an access code;~~
~~an electronic circuit that provides an output to an unlock device if the input code matches the access code; and,~~
~~wherein the switch decreases the current drained from the battery after receiving the input code.~~

~~24. The circuit of claim 23, the electronic circuit that provides the output to the unlock device comprises a microprocessor.~~

~~25. The circuit of claim 23, the electronic circuit that provides the output to the unlock device comprising an electromechanical driver.~~

~~26. The circuit of claim 23, the circuit that compares the input code to an access code comprising a microprocessor.~~

~~27. The circuit of claim 23, the unlock device comprising at least one of the following: a solenoid; an electromechanical relay; a DC motor; and, solid-state relay.~~

~~28. The circuit of claim 23, wherein the electromagnetic signal is infrared.~~

~~29. The circuit of claim 23, wherein the electromagnetic signal is within a radio frequency.~~

~~30. The device of claim 1 wherein the microprocessor is periodically enabled.~~

31. An electronic access control device comprising:

a circuit having a portion deactivated during a first time period;

the portion of the circuit enabled during a second time period,

the portion of the circuit having an enable output signal generated in response to as sensed electromagnetic signal;

the portion of the circuit being enabled for an extended time period that is greater than the second time period;

the portion of the circuit having an input code output generated in response to the electromagnetic signal and during the extended time period;

a microprocessor having an unlock output signal generated if the input code matches the access code;

an electromechanical driver having an output signal generated in response to the unlock signal; and.

~~The device of claim 1 further comprising~~ a keypad operatively connected to the microprocessor.

32. An electronic access control device comprising:

a circuit having a portion deactivated during a first time period;

the portion of the circuit enabled during a second time period,

the portion of the circuit having an enable output signal generated in response to as sensed electromagnetic signal;

the portion of the circuit being enabled for an extended time period that is greater than the second time period;

the portion of the circuit having an input code output generated in response to the electromagnetic signal and during the extended time period;

a microprocessor having an unlock output signal generated if the input code matches the access code;

an electromechanical driver having an output signal generated in response to the unlock signal; and.

~~The device of claim 1 further comprising~~ a program key operatively connected to the microprocessor.

33. An electronic access control device comprising:

a circuit having a portion deactivated during a first time period;

the portion of the circuit enabled during a second time period,

the portion of the circuit having an enable output signal generated in response to as sensed electromagnetic signal;

the portion of the circuit being enabled for an extended time period that is greater than the second time period;

the portion of the circuit having an input code output generated in response to the electromagnetic signal and during the extended time period;

a microprocessor having an unlock output signal generated if the input code matches the access code;

an electromechanical driver having an output signal generated in response to the unlock signal; and,

~~The device of claim 1 further comprising~~ a low-battery detection circuit enabled by the microprocessor for measuring a battery voltage, and wherein the low-battery detection circuit is disabled during the first time period.

34. An electronic access control device comprising:

a circuit having a portion deactivated during a first time period;

the portion of the circuit enabled during a second time period,

the portion of the circuit having an enable output signal generated in response to as sensed electromagnetic signal;

the portion of the circuit being enabled for an extended time period that is greater than the second time period;

the portion of the circuit having an input code output generated in response to the electromagnetic signal and during the extended time period;

a microprocessor having an unlock output signal generated if the input code matches the access code;

an electromechanical driver having an output signal generated in response to the unlock signal; and,

~~The device of claim 1~~ wherein the electromechanical driver has a first state and a second state, the driver output signal providing a ~~higher~~ lower non-zero power output in the ~~first~~ second state than in the ~~second~~ first state, and a timer for triggering a transition from the first state to the second state.

35. An electronic access control device comprising:

a circuit having a portion deactivated during a first time period;

the portion of the circuit enabled during a second time period,

the portion of the circuit having an enable output signal generated in response to as sensed electromagnetic signal;

the portion of the circuit being enabled for an extended time period that is greater than the second time period;

the portion of the circuit having an input code output generated in response to the electromagnetic signal and during the extended time period;

a microprocessor having an unlock output signal generated if the input code matches the access code;

an electromechanical driver having an output signal generated in response to the unlock signal; and,

~~The device of claim 1 further comprising~~ a communication port operatively connected to the microprocessor for sending the access code to the microprocessor that is written into a memory.

36. The device of claim 35 wherein the microprocessor is programmed to receive a serial number for the device through the communication port and write the serial number into the memory.

37. The device of claim 36 wherein the microprocessor transmits the serial number through the communication port.

~~38. The device of claim 1 further comprising a communication port operatively connected to the microprocessor, and wherein the microprocessor is programmed to transmit the access code through the communication port.~~

~~39. The apparatus of claim 9, the fourth circuit comprising a microprocessor.~~

40. An apparatus comprising:

a first circuit comprising an oscillator and having a first circuit output signal;

a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;

a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;

a fourth circuit temporarily enabled to compare the input code to an access code;

an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code; and,

~~The apparatus of claim 9 further comprising~~ a keypad operatively connected to the fourth circuit comprising a microprocessor.

41. An apparatus comprising:

a first circuit comprising an oscillator and having a first circuit output signal;

a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;

a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;

a fourth circuit temporarily enabled to compare the input code to an access code;

an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code; and,

~~The apparatus of claim 9,~~ the fourth circuit comprising a microprocessor and a program key operatively connected to the microprocessor.

42. An apparatus comprising:

a first circuit comprising an oscillator and having a first circuit output signal;

a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;

a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;

a fourth circuit temporarily enabled to compare the input code to an access code;

an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code; and.

~~The apparatus of claim 9,~~ the fourth circuit comprising a microprocessor and a low-battery detection circuit enabled by the microprocessor for measuring a battery voltage, and wherein the low-battery detection circuit is periodically disabled and enabled.

43. An apparatus comprising:

a first circuit comprising an oscillator and having a first circuit output signal;

a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;

a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;

a fourth circuit temporarily enabled to compare the input code to an access code;

an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code; and,

~~The apparatus of claim 9,~~ the fourth circuit comprising a microprocessor and wherein the electromechanical driver has a first state and a second state, the driver output providing a higher non-zero power output in the first state than in the second state, and a timer for triggering a transition from the first state to the second state.

44. An apparatus comprising:

a first circuit comprising an oscillator and having a first circuit output signal;

a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;

a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;

a fourth circuit temporarily enabled to compare the input code to an access code;

an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code; and,

~~The apparatus of claim 9,~~ the fourth circuit comprising a microprocessor having a communication port for sending an access code to the microprocessor that is written into a memory.

45. The apparatus of claim 44 wherein the microprocessor is programmed to receive a serial number through the communication port and write the serial number into the memory.

46. An apparatus comprising:

a first circuit comprising an oscillator and having a first circuit output signal;

a second circuit enabled and disabled in response to the first circuit output signal, the second circuit having a second circuit output signal generated in response to receipt of an electromagnetic signal;

a third circuit temporarily enabled during the receipt of the electromagnetic signal, the circuit having a third circuit output signal comprising an input code generated in response to receipt of an electromagnetic signal;

a fourth circuit temporarily enabled to compare the input code to an access code;

an electromechanical driver having an output that is provided to an unlock device if the input code matches the access code;

the fourth circuit comprising a microprocessor having a communication port for sending an access code to the microprocessor that is written into a memory;

the microprocessor is programmed to receive a serial number through the communication port and write the serial number into the memory; and,

~~The apparatus of claim 45 wherein~~ the microprocessor transmits the serial number through the communication port.

~~47. The apparatus of claim 9, the fourth circuit comprising a microprocessor having a communication port operatively connected thereto, and wherein the microprocessor is programmed to transmit the access code through the communication port.~~

~~48. The apparatus of claim 15 wherein the microprocessor is periodically enabled.~~

49. An apparatus comprising:

an oscillator having an output comprising a plurality of duty cycles;

a circuit that is periodically enabled for a time t_1 and disabled for a time t_2 during at least some of the duty cycles;

a portion of the circuit that generates an input code in response to an electromagnetic signal;

a microprocessor that compares the input code to an access code;

a switch that enables the portion of the circuit as the input code is being received for a time t_3 that is greater than the time t_1; and,

~~The apparatus of claim 15 further comprising~~ a keypad operatively connected to the microprocessor.

50. An apparatus comprising:

an oscillator having an output comprising a plurality of duty cycles;

a circuit that is periodically enabled for a time t_1 and disabled for a time t_2 during at least some of the duty cycles;

a portion of the circuit that generates an input code in response to an electromagnetic signal;

a microprocessor that compares the input code to an access code;

a switch that enables the portion of the circuit as the input code is being received for a time t_3 that is greater than the time t_1; and,

~~The apparatus of claim 15 further comprising~~ a program key operatively connected to the microprocessor.

51. An apparatus comprising:

an oscillator having an output comprising a plurality of duty cycles;

a circuit that is periodically enabled for a time t_1 and disabled for a time t_2 during at least some of the duty cycles;

a portion of the circuit that generates an input code in response to an electromagnetic signal;

a microprocessor that compares the input code to an access code;

a switch that enables the portion of the circuit as the input code is being received for a time t_3 that is greater than the time t_1; and,

~~The apparatus of claim 15 further comprising~~ a low-battery detection circuit enabled by the microprocessor for measuring a battery voltage, and wherein the low-battery detection circuit is periodically disabled and enabled.

52. An apparatus comprising:

an oscillator having an output comprising a plurality of duty cycles;

a circuit that is periodically enabled for a time t_1 and disabled for a time t_2 during at least some of the duty cycles;

a portion of the circuit that generates an input code in response to an electromagnetic signal;

a microprocessor that compares the input code to an access code;

a switch that enables the portion of the circuit as the input code is being received for a time t_3 that is greater than the time t_1; and,

~~The apparatus of claim 15 further comprising~~ an electromechanical driver operatively connected to the microprocessor, the driver having a first state and a second state, and an output signal providing a higher non-zero power output in the first state than in the second state, and a timer for triggering a transition from the first state to the second state.

53. An apparatus comprising:

an oscillator having an output comprising a plurality of duty cycles;

a circuit that is periodically enabled for a time t_1 and disabled for a time t_2 during at least some of the duty cycles;

a portion of the circuit that generates an input code in response to an electromagnetic signal;

a microprocessor that compares the input code to an access code;

a switch that enables the portion of the circuit as the input code is being received for a time t_3 that is greater than the time t_1; and,

~~The device of claim 15 further comprising~~ a communication port operatively connected to the microprocessor for sending the access code to the microprocessor that is written into a memory.

54. The device of claim 53 wherein the microprocessor is programmed to receive a serial number for the device through the communication port and write the serial number into the memory.

55. The device of claim 54 wherein the microprocessor transmits the serial number through the communication port.

~~56. The device of claim 15 further comprising a communication port operatively connected to the microprocessor, and wherein the microprocessor is programmed to transmit the access code through the communication port.~~

~~57. The device of claim 23, the electronic circuit that compares the input code to the access code comprising a microprocessor that is periodically enabled.~~

58. A circuit operating on current drained from a battery comprising;

an electronic circuit having an output that indicates detection of a device capable of providing an electromagnetic signal;

a decoder that extracts an input code transmitted via the electromagnetic signal;

a switch that, in response to an input, increases the current drained from the battery;

an electronic circuit that compares the input code to an access code;

an electronic circuit that provides an output to an unlock device if the input code matches the access code;

wherein the switch decreases the current drained from the battery after receiving the input code; and,

~~The circuit of claim 23 further comprising~~ a keypad operatively connected to the comparing circuit comprising a microprocessor.

59. A circuit operating on current drained from a battery comprising:

an electronic circuit having an output that indicates detection of a device capable of providing an electromagnetic signal;

a decoder that extracts an input code transmitted via the electromagnetic signal;

a switch that, in response to an input, increases the current drained from the battery;

an electronic circuit that compares the input code to an access code;

an electronic circuit that provides an output to an unlock device if the input code matches the access code;

wherein the switch decreases the current drained from the battery after receiving the input code; and,

~~The circuit of claim 23,~~ the comparing circuit comprising a microprocessor and a program key operatively connected to the microprocessor.

60. A circuit operating on current drained from a battery comprising:

an electronic circuit having an output that indicates detection of a device capable of providing an electromagnetic signal;

a decoder that extracts an input code transmitted via the electromagnetic signal;

a switch that, in response to an input, increases the current drained from the battery;

an electronic circuit that compares the input code to an access code;

an electronic circuit that provides an output to an unlock device if the input code matches the access code;

wherein the switch decreases the current drained from the battery after receiving the input code; and.

~~The circuit of claim 23,~~ the comparing circuit comprising a microprocessor and a low-battery detection circuit enabled by the microprocessor for measuring a voltage associated with the battery, and wherein the low-battery detection circuit is periodically disabled and enabled.

61. A circuit operating on current drained from a battery comprising:

an electronic circuit having an output that indicates detection of a device capable of providing an electromagnetic signal;

a decoder that extracts an input code transmitted via the electromagnetic signal;

a switch that, in response to an input, increases the current drained from the battery;

an electronic circuit that compares the input code to an access code;

an electronic circuit that provides an output to an unlock device if the input code matches the access code;

wherein the switch decreases the current drained from the battery after receiving the input code; and.

~~The circuit of claim 23,~~ the comparing circuit comprising a microprocessor and wherein the circuit providing the output to the unlock device comprising an electromechanical driver having a first state and a second state, the driver output providing a higher non-zero power output in the first state than in the second state, and a timer for triggering a transition from the first state to the second state.

62. A circuit operating on current drained from a battery comprising:

an electronic circuit having an output that indicates detection of a device capable of providing an electromagnetic signal;

a decoder that extracts an input code transmitted via the electromagnetic signal;

a switch that, in response to an input, increases the current drained from the battery;

an electronic circuit that compares the input code to an access code;

an electronic circuit that provides an output to an unlock device if the input code matches the access code;

wherein the switch decreases the current drained from the battery after receiving the input code; and,

~~The circuit of claim 23,~~ the comparing circuit comprising a microprocessor having a communication port for sending the access code to the microprocessor that is written into a memory.

63. The circuit of claim 62 wherein the microprocessor is programmed to receive a serial number through the communication port and write the serial number into the memory.

64. The circuit of claim 63 wherein the microprocessor transmits the serial number through the communication port.

~~65. The circuit of claim 23, the comparing circuit comprising a microprocessor having a communication port operatively connected thereto, and wherein the microprocessor is programmed to transmit the access code through the communication port.~~